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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/623,346	07/18/2003	Hiroyasu Shimanuki	4041J-000746	5021

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EXAMINER

WALBERG, TERESA J

ART UNIT	PAPER NUMBER
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3753

DATE MAILED: 07/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

6

<b>Office Action Summary</b>	<b>Application No.</b> 10/623,346	<b>Applicant(s)</b> SHIMANUKI ET AL	
	<b>Examiner</b> Teresa J. Walberg	<b>Art Unit</b> 3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>7/18/03</u> . | 6) <input type="checkbox"/> Other: ____  |

### DETAILED ACTION

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4, 6, 9, and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Hasegawa et al (5,481,886).

Hasegawa et al disclose a heat exchanger as claimed (See Fig. 6) including tubes (15) through which fluid flows (col. 7, lines 17-18), the tubes (15) being arranged vertically (Fig. 9) , fins (14) provided between the tubes (15), a header tank (16 and 17) connected to bottom ends of the tubes (15), the header tank (16 and 17) being formed with drains (23, 28) which are depressions (Fig. 6), at positions between the tubes (15), wherein the drains (23, 28) downwardly direct water that accumulates between the tubes (15), the drains narrowing toward the bottom (see Fig. 6), and sloping downwardly toward the air downstream side and in a direction away from the tubes (see Fig. 6), the header tank having a larger radius of curvature on a side adjacent the tubes (see Fig. 6), the fluid being refrigerant (see abstract line 2), and a member (74) defining a surface (walls 75) for facilitating drainage.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 5, 7, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasegawa et al (5,481,886).

Hasegawa et al, as discussed above, disclose a heat exchanger as claimed with the exception of the drains having diamond shapes, the distance between the surface and the drain being less than 1 mm, and the distance between the fin and the header tank being less than 1 mm. However, the exact shape of the drain would not appear to be critical, since the apparatus would appear to function in the same manner whether the drain was rectangular as shown, or some other shape. It would thus have been obvious to make the drain of Hasegawa et al diamond shaped rather than rectangular as a matter of aesthetic design.

The exact distances between the parts would not appear to be critical since the apparatus would appear to function in the same manner whether the spacings were higher or lower than 1 mm. It is also appear that the exact spacing would need to be determined based on the sizes of the other parts of the device, which sizes have not be specified. It would have been obvious to make the distance between the surface and the drain less than 1 mm, and the distance between the fin and the header tank less than 1 mm in the heat exchanger of Hasegawa et al, since Hasegawa et al shows these part being closely spaced and since the exact distances used do not appear to be critical.

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5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Martin, Smith, Krackowizer, Kim, Sausner, Hughes et al, Uehara, Saida et al, Ko et al, and Miura et al are cited to show condensate handling structure.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Teresa J. Walberg whose telephone number is 571-272-4790. The examiner can normally be reached on M-F 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gene Mancene can be reached on 571-272-4930. The fax phone number for the organization where this application or proceeding is assigned is currently 703-872-9306. After July 14, 2005, the fax number for this organization will change to 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Teresa J. Walberg  
Primary Examiner  
Art Unit 3753

tjw